

1 **WHAT IS CLAIMED IS:**

2 1. An process for controlling the speed of a traveling block of a well workover rig,
3 comprising:

4 determining the speed of the traveling block;

5 comparing the speed of the traveling block to a maximum velocity value; and

6 adjusting the speed of the traveling block so as to maintain its speed at or below
7 the maximum velocity value.

8 2. The process of claim 1, wherein the speed of the traveling block is adjusted by
9 slowing down the speed of the engine controlling the traveling block.

10 3. The process of claim 1, wherein an alarm is sounded when the speed of the
11 traveling block exceeds the maximum velocity value.

12 4. A process for controlling the speed of a traveling block of a well workover rig,
13 comprising:

14 determining the speed of the traveling block, the position of the traveling block
15 with a traveling range, and the weight on the traveling block;

16 comparing the speed of the traveling block to a maximum velocity value, wherein
17 the maximum velocity value is determined as a function of the weight on
18 the traveling block; and

19 adjusting the speed of the traveling block so as to maintain its speed at or below
20 the maximum velocity value.

21 5. The process of claim 4, wherein the speed of the traveling block is adjusted by
22 slowing down the speed of the engine controlling the traveling block.

23 6. The process of claim 4, wherein an alarm is sounded when the speed of the
24 traveling block exceeds the maximum velocity value.

25 7. The process of claim 4, wherein the maximum velocity value in an upper slow
26 down zone of the traveling range of the traveling block is lower than the maximum
27 velocity value at a point immediately below the upper slow down range.

28 8. The process of claim 7, wherein the maximum velocity value in the upper slow
29 down zone continually decreases from the bottom of the zone to the top of the zone.

30 9. The process of claim 7, wherein the length upper slow down zone is proportional
31 to the momentum of the traveling block.

1 10. The process of claim 4, wherein the maximum velocity value in a lower slow
2 down zone of the traveling range of the traveling block is lower than the maximum
3 velocity value at a point immediately above the upper slow down range.

4 11. The process of claim 10, wherein the maximum velocity value in the lower slow
5 down zone continually decreases from the top of the zone to the bottom of the zone.

6 12. The process of claim 10, wherein the length of the lower slow down zone is
7 proportional to the momentum of the traveling block.

8 13. The process of claim 4, further comprising the steps of sensing when the traveling
9 block has reached an upper most position and stopping the movement of the traveling
10 block when the upper most position is reached.

11 14. The process of claim 13, wherein the sensing of the upper most position step is
12 accomplished with a metal detector sensing the traveling block.

13 15. The process of claim 4, wherein the traveling block speed is slowed using a
14 pneumatic brake attached to a proportional valve.

15 16. The process of claim 4, wherein the traveling range has an upper limit and a lower
16 limit, the process further comprising logging whether or not the traveling block reaches
17 either the upper limit or the lower limit.

18 17. A process for controlling the momentum of a traveling block comprising:
19 determining the speed of the traveling block, the position of the traveling block
20 with a traveling range, and the weight on the traveling block;
21 calculating the momentum of the traveling block;
22 comparing the momentum of the traveling block to a maximum momentum value;
23 and
24 adjusting the speed of the traveling block so as to maintain its speed at or below
25 the maximum velocity value.

26 18. The process of claim 17, wherein the speed of the traveling block is adjusted by
27 slowing down the speed of the engine controlling the traveling block.

28 19. The process of claim 17, wherein an alarm is sounded when the speed of the
29 traveling block exceeds the maximum momentum value.

1 20. The process of claim 17, wherein the maximum momentum value in an upper
2 slow down zone of the traveling range of the traveling block is lower than the maximum
3 momentum value at a point immediately below the upper slow down range.

4 21. The process of claim 20, wherein the maximum momentum value in the upper
5 slow down zone continually decreases from the bottom of the zone to the top of the zone.

6 22. The process of claim 20, wherein the length upper slow down zone is proportional
7 to the momentum of the traveling block.

8 23. The process of claim 17, wherein the maximum momentum value in a lower-slow
9 down zone of the traveling range of the traveling block is lower than the maximum
10 momentum value at a point immediately above the upper slow down range.

11 24. The process of claim 23, wherein the maximum momentum value in the lower
12 slow down zone continually decreases from the top of the zone to the bottom of the zone.

13 25. The process of claim 23, wherein the length of the lower slow down zone is
14 proportional to the momentum of the traveling block.

15 26. The process of claim 17, wherein the traveling block speed is slowed using a
16 pneumatic brake attached to a proportional valve.

17 27. The process of claim 17, wherein the traveling range has an upper limit and a
18 lower limit, the process further comprising logging whether or not the traveling block
19 reaches either the upper limit or the lower limit.
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